

Remarks:

Claim 54 has been amended to correct a typographical error. Claims 40, 42-48 and 50-65 have been amended to correct a clerical error in the preliminary amendment with respect to the claim numbering of the dependencies. It is believed that these amendments resolve the objections noted in the Office Action and so withdrawal of the objections is respectfully requested.

Favorable reconsideration is respectfully requested of the rejection of claims 39, 41, 43, 45, 47-54, 56-60 and 63 as being anticipated by U.S. patent 5,142,010 to Olstein. As defined by claim 39, the present invention is directed to a polymeric material incorporating an infection resistant biguanide compound pendant to the polymer chain wherein the secondary amine nitrogens of the biguanide are bound to the polymer chain by means of a substituted urea linkage, a substituted thiourea linkage, a N,N-disubstituted amide linkage, or a N,N-disubstituted hemiaminal linkage or a tertiary amine linkage. By contrast, the Olstein patent does not disclose any of these types of linkages, which are generally simple to make and use readily available and economical materials. Instead, Olstein discloses polymerization of biguanide monomers to form a polymeric material with the biguanide pendant to the polymer chain, but the linkages are quite different. The biguanide functional group is represented by formula I of the Olstein patent and it is shown as bound to a polymerizable group A via a phenylene group, which is identified in formula II as Q (col. 2, lines 47ff. and claim 1).

Formula VIII refers to Z, a pre-cursor of Q (col. 7, lines 8-45), as being “any number” of species, but clarifies that it is generally phenylene. A bald reference to “any number” of species is not a disclosure or suggestion of any particular species other than a phenylene species, which is identified specifically, and certainly does not disclose or suggest the specific types of linkages identified in subject claim 39. Indeed, the Olstein patent, therefore, discloses only a secondary amine linkage of a benzene ring to the biguanide nitrogen.

In the Office Action, it is asserted, beginning at the last line of page 2, that “[p]olymerized biguanide compounds of the invention [of Olstein] contain vinyl polymerization groups, which can be copolymerized with various unsaturated monomers including alpha olefins, ethylene and propylene (col. 9, lin. 48-60). The reactive sites include carboxyl and/or amino groups (col. 5, lin. 29-65). These disclosures render the claims anticipated.” However, the text at column 9 of Olstein describes the polymerization of the group A on the phenylene moiety

attached to the biguanide monomer, where the secondary nitrogen of the biguanide group is already linked by a regular amine bond to the phenylene group, to form the polymer. It does not describe the binding of the nitrogen to the polymer itself. Therefore, the biguanide compounds of Olstein are not “polymerized” as claimed in the quoted section of the Office Action, but “polymerizable.” Thus, the compounds of Olstein are not polymers, but monomers that are to be polymerized.

None of the linkages of the polymers called for by current claim 39 are mentioned in connection with the sites at issue in claim 39, nor is it seen how they can be inferred from the reaction procedures described by Olstein. Accordingly, it is submitted that claim 39 defines patentably over the Olstein patent. Moreover, because the discussed claim feature that distinguishes claim 39 over the Olstein patent is present in all other claims that have been rejected over the Olstein patent, claims 41, 43, 45, 47-54, 56-60 and 63, it is submitted that claims 41, 43, 45, 47-54, 56-60 and 63 likewise distinguish patentably over the Olstein patent.


Favorable reconsideration is also respectfully requested of the rejection of claims 39-45 and 63-65 as being anticipated by U.S. patent 4,537,746 to Ogunbiyi et al. This rejection is based on the Examiner’s conclusion that the Ogunbiyi et al. patent “discloses biocidal biguanide polymers (abstract) . . .” The Ogunbiyi et al. patent, however, describes only a solution of MONOMERIC biguanide compounds used for disinfecting contact lenses. In fact, the abstract, to which the Examiner directs attention states explicitly that the biguanides are monomeric. Therefore, the Ogunbiyi et al. patent fails to teach or suggest the claimed polymers. Moreover, in the Ogunbiyi et al. patent, the biguanide moieties are bound by regular amine bonds to hexamethylene at the center of the molecule and to phenylene (and optionally alkyl, X) at the other end. Thus, claims 39-45 and 63-65 define patentably over the Ogunbiyi et al. patent.

Favorable reconsideration is also respectfully requested of the rejection of claims 39-65 as being obvious over the Olstein patent in view of U.S. patent 4,537,746, which is the Ogunbiyi et al. patent that is discussed above, but is referred to as “Stockel.” From the patent number and the Examiner’s discussion, which corresponds to the Examiner’s previous discussion of the Ogunbiyi et al. patent, it is believed that the secondary reference is intended to be the Ogunbiyi et al. patent and that the identification of the name as Stockel is in error. The rejection will be discussed on that belief. As discussed above, all pending claims call for the secondary amine nitrogens of the biguanide to be bound to the polymer chain by means of a substituted urea

linkage, a substituted thiourea linkage, a N,N-disubstituted amide linkage, or a N,N-disubstituted hemiaminal linkage or a tertiary amine linkage and so distinguish patentably over the Olstein patent. The Ogunbiyi et al. patent does not address this deficiency. In fact, as noted above, the Ogunbiyi et al. patent discloses a biguanide monomer, not a polymer, that is copolymerized with vinyl compounds. In any event, however, the Ogunbiyi et al. patent nowhere addresses or implies anything with respect to how biguanide groups are bonded at one or more, but not all, of the secondary amines. Accordingly, the Ogunbiyi et al. patent does not make up for the deficiencies of the Olstein patent and so all pending claims define patentably over those two patents, whether considered individually or in combination.

In view of the foregoing, it is submitted that all pending claims should be in allowable condition and favorable reconsideration of the outstanding rejections and early allowance of all claims are earnestly solicited.

Respectfully submitted,



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